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Laparascopic Splenectomy Due to Splenic Injury after Colonoscopy

Kolonoskopi Sonrasi Dalak Yaralanmasi Nedeniyle Splenektomi

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Abstract

Colonoscopy, which is routinely performed in diagnosis and treatment of colorectal disorders, is a reliable procedure. Its most frequent complications are bleeding and perforation. Splenic rupture is a very rarely met complication of colonoscopy, and delay in its diagnosis leads to increased morbidity and mortality. We presented a 69 years old female patient, who was diagnosed by computerized abdominal tomography, performed for her abdominal pain, which started following the colonoscopy. After 15 days of medical treatment and follow-up, laparoscopic splenectomy was performed one month after her colonoscopy. The patient was discharged on her 4th postoperative day, with uneventful recovery. In patients who have complaint of abdominal pain following colonoscopy, an intraabdominal pathological condition should be considered and computerized abdominal tomography should be performed. If there is no detected intraperitoneal bleeding, in other words, if there is a sub-capsular hematoma of the spleen, medical management by monitoring the vital signs may be preferred. Then, splenectomy should be performed at an appropriate time.

Keywords: Laparoscopy, splenectomy, colonoscopy

Öz

Kolonoskopi kolorektal hastalıkların tanı ve tedavisinde rutin olarak yapılan güvenilir bir işlemdir. En sık görülen komplikasyonlar kanama ve perforasyondur. Dalak rüptürü ise oldukça nadir görülen bir durumdur. Tanıda gecikme morbidite ve mortalitiye artırır. Biz 69 yaşında bir bayan hastayı sunduk. Kolonoskopi sonrası başlayan karın ağrısı şikayeti olan hastaya çekilen batın tomografisi ile tanı konuldu. On beş gün süreyle medikal tedavi uygulanan ve takip edilen hastaya kolonoskopiden 1 ay sonra laparaskopik splenektomi yapıldı. Ameliyat sonrası bir patoloji olmayan hasta 4. gün taburcu edildi. Kolonoskopi sonrası karın ağrısı oluşan hastalarda batın içi bir patoloji olabileceği düşünülerek batın tomografisi yapılmalı. Eğer periton içi bir kanama yoksa yani dalakta subkapsüler bir hematom var ise vital bulgu takibi ile medikal tedavi yapılabilir. Daha sonra hastaya uygun zamanda splenektomi yapılmalıdır.

Anahtar Kelimeler: Laparaskopi, splenektomi, kolonoskopi

Introduction

Colonoscopy, which is performed in the diagnosis and treatment of colorectal disorders, is a quite reliable procedure. Its most frequent complications are bleeding and perforation. These complications become more frequent with the addition of a polypectomy to the colonoscopy procedure [1]. Extracolonic and visceral organ injuries such as appendicitis and pneumothorax are rare [2]. Splenic rupture is a very rare complication following colonoscopy. Its incidence is 1-21/100,000 and the first case was reported in 1974 [3, 4]. In the literature, the number of cases reported until now is just over 100 [5]. Although complaints develop within a few hours following colonoscopy in most of the patients, delay in diagnosis is quite common and this situation leads to increased morbidity and mortality [4, 6]. Splenic rupture is diagnosed by computerized tomography, following medical history of colonoscopy, presence of sudden-onset left upper quadrant abdominal pain, left shoulder pain, and reduced hemoglobin level. We report a case of splenic rupture following colonoscopy, treated with urgent splenectomy.

Case Report

A 69-year-old female patient underwent diagnostic colonoscopy for sigmoid colonic wall thickening, identified by computerized abdominal tomography in another medical center (Figure 1). The procedure was performed under intra-

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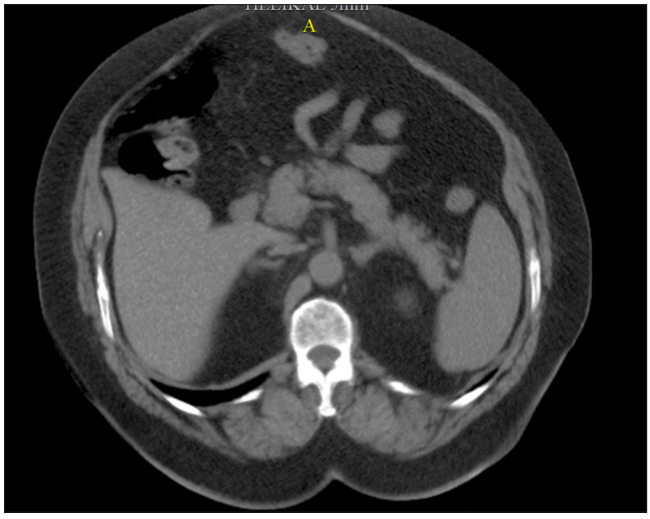

Figure 1. *Unenhanced axial abdominal CT scan prior to colonoscopy: Spleen monitored with normal size and homogeneous parenchymal structure. Spleen integrity is normal.*
CT: computed tomography.

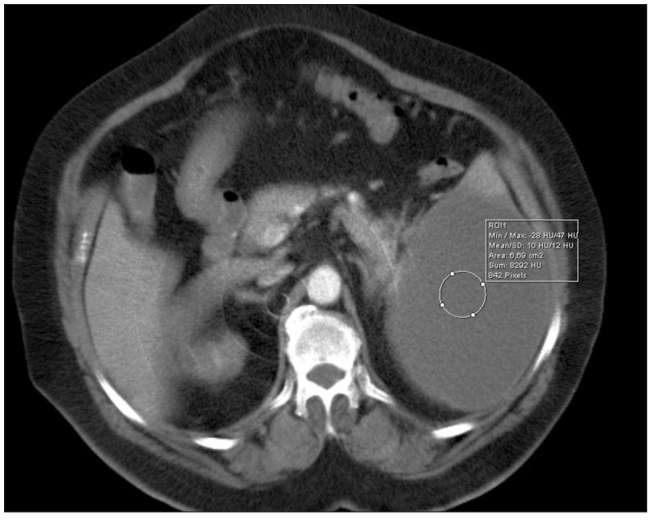

Figure 2. *Contrasted CT image of abdomen after one week of the colonoscopy: A hematoma, which has an average density of 10 HU and limited with spleen capsule, is observed.*
CT: computed tomography.

venous sedation (midazolam 5 mg iv). According to the information obtained from the patient, she was discharged from the hospital following her observation in the recovery room for approximately 2 hours. One week later, the patient was admitted to the emergency service with abdominal pain at her left lower and left upper quadrants. Her laboratory results in the emergency service were hemoglobin 12 mg/dL, WBC 16.000/mm^3, creatinine 3.1 mg/dL, and BUN 43.46 mg/dL. Her arterial blood pressure was 100/50 mmHg, pulse was 106/min, and respiratory rate was high. Her physical examination revealed diffuse tenderness, which was more significant at her left upper and lower quadrants; signs of peritoneal irritation were absent. Her P-A chest radiogram and plain abdominal radiogram did not show any sign of free air. Computerized abdominal tomography showed sub-capsular 15 x 10 sized hematoma of the spleen. She was admitted to the hospital for observation, considering that it was a post-colonoscopy subcapsular splenic hematoma (Figure 2). During follow-up, no pathologic changes were observed in her vital signs. On the 3rd day of her hospitalization, one unit of packed red blood cells was transfused due to her decreased hemoglobin value. Her renal functions improved, following fluid treatment. After observation in the hospital for 15 days, she was discharged. Her computerized abdominal tomography, performed at 3rd week, revealed the ongoing presence of sub-capsular hematoma [Figure 3]. Her surgery, which had been postponed due to her comorbid disorders, was performed by laparoscopic splenectomy one month later, and she was discharged on her 4th postoperative day, with uneventful recovery.

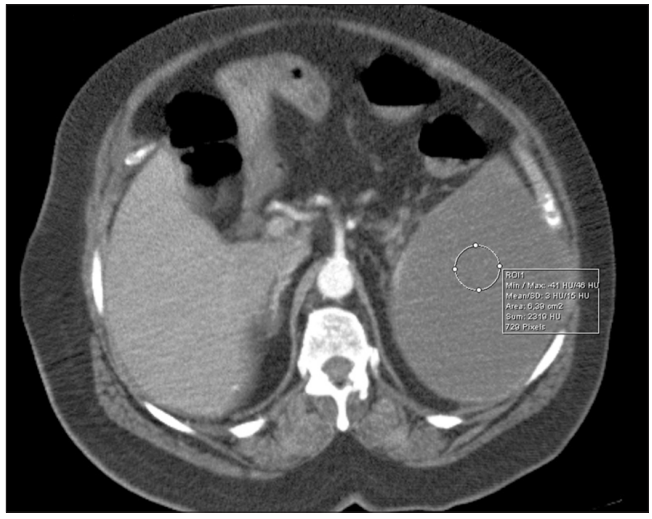

Figure 3. *Contrasted CT image of abdomen after three weeks of the colonoscopy: Hematoma has a tendency to become chronic and its average density was measured as 3 HU.*
CT: computed tomography.

Discussion

Splenic injury following colonoscopy is very rare. This condition may be explained by either the incidence of splenic injury being very low or the complications being left unreported [2]. We have had approximately 20 years of clinical experience with colonoscopy until now and we had no case with post-colonoscopy splenic injury. Therefore, we suggest that the incidence of splenic injury following colonoscopy is very low.

Splenomegaly, adhesions related to previous operations, anticoagulant use, smoking, inflammatory bowel disease, difficult colonoscopy, intention to rush during the procedure, and insufficient visualization due to inadequate bowel cleansing are among predisposing factors for splenic injury [7, 8]. However, there is no specific cause of splenic injury. Mostly, it is caused by direct trauma or excessive traction of splenocolic ligament. Additionally, splenic injuries during polypectomy and biopsy procedures have also been reported. Splenic hematoma occurs related to such injuries of splenic parenchyma [3, 6]. We have no idea about the mechanism of splenic injury, because it occurred after process performed in other center.

In these patients, the clinical features are nonspecific, and this situation leads to delay in diagnosis. The symptoms of patients admitted after more than 24 hours following colonoscopy are milder, related to injuries (5, 9). The most frequent symptom is left upper quadrant pain with a rate of 93%. The second most frequent symptom is left shoulder pain with a rate of 88%; this pain is caused by diaphragmatic irritation, related to distention of splenic capsule following bleeding (7). The majority of patients present within the first 24 hours following colonoscopy, and the initial clinical findings are anemia and hypotension together with abdominal pain [2].

The most important diagnostic tool in splenic injuries is computerized tomography. Since it shows both the splenic damage and also the amount of intraabdominal bleeding, computerized tomography is important in the aspect of treatment options [10]. Ultrasonography has been used successfully in some patients; however, it was not able to achieve such successful results as computerized tomography. Although plain abdominal radiography shows intraabdominal free air, it leads to delay in diagnosis, since it is unable to determine splenic damage and the amount of intraabdominal bleeding [11]. The most significant complaint of our patient after the procedure was abdominal pain. The diagnosis was made by the help of computerized abdominal tomography, which was performed considering an intraabdominal pathology.

The treatment of choice is mostly splenectomy (2, 6). There are reports about cases managed by blood transfusions depending on the hemodynamic status of the patient, and broad-spectrum antibiotics [8, 12]. Our patient was, primarily, treated conservatively with the purpose of hemodynamic stabilization, after that, laparoscopic splenectomy was performed.

Conclusion

In conclusion colonoscopy is a frequently performed procedure for the purpose of diagnosis and treatment. Splenic injury following colonoscopy is seen very rarely. Suspicion, in especially patients with abdominal pain following the procedure, is quite important for early diagnosis. Computerized tomography is very important for diagnosis.

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